

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference K-734PCT	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP2005/016237	International filing date (<i>day/month/year</i>) 05.09.2005	Priority date (<i>day/month/year</i>) 06.09.2004	
International Patent Classification (IPC) or national classification and IPC F04B49/00			
Applicant KOMATSU LTD.			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																								
<p>4. This report contains indications relating to the following items:</p> <table> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </tbody> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/016237

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
 - the international application in the language in which it was filed
 - the translation of the international application into _____, which is the language of a translation furnished for the purposes of:
 - international search (Rule 12.3(a) and 23.1(b))
 - publication of the international application (Rule 12.4(a))
 - international preliminary examination (Rule 55.2(a) and/or 55.3(a))
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 - the international application as originally filed/furnished
 - the description:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____
 - the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* _____ received by this Authority on _____

nos.* _____ received by this Authority on _____
 - the drawings:

sheets _____ as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____
 - a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:
 - the description, pages _____
 - the claims, nos. _____
 - the drawings, sheets/figs _____
 - the sequence listing (*specify*): _____
 - any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - the description, pages _____
 - the claims, nos. _____
 - the drawings, sheets/figs _____
 - the sequence listing (*specify*): _____
 - any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superceded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.	PCT/JP2005/016237
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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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1. Statement

Novelty (N)	Claims	3, 5-6	YES
	Claims	1-2, 4, 7	NO
Inventive step (IS)	Claims		YES
	Claims	1-7	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 56-159580 A (Hitachi Construction Machinery Co., Ltd.), 08 December 1981

Document 2: JP 6-221301 A (Mihoshi Jukogyo Kabushiki Kaisha), 09 August 1994

The invention set forth in claims 1 and 2 is disclosed in document 1 cited in the international search report; therefore, the invention in question lacks novelty and does not involve an inventive step.

Document 1 makes disclosures pertaining to an engine load control device equipped with an engine (1) in which the target rotational speed is set between the low idle rotational speed (N_{rl}) and the high idle rotational speed (N_{rh}); a plurality of variable-displacement hydraulic pumps (2, 3) that are driven by means of the engine (1); absorption torque adjusting means (4, 5) for adjusting the absorption torque of one or more of the variable-displacement hydraulic pumps (2, 3); a rotational speed detection means (11) for detecting the rotational speed of the engine (1); and a control means (13) for lowering the absorption torque of the variable-displacement hydraulic pumps (2, 3) in cases when the detected rotational speed of the engine (1) falls to a

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prescribed deviation value (ΔN) or lower.

Therein, document 1 does not specifically mention the inclusion of a plurality of hydraulic actuators that are supplied with the hydraulic fluid discharged from the hydraulic pumps; however, it would have been obvious to a person skilled in the art to provide hydraulic actuators to a system that includes hydraulic pumps.

In addition, document 1 (page 3, lower left column, lines 15 to 20 and fig. 10) discloses a feature wherein the deviation value (ΔN) is set so as to correspond to the low idle rotational speed (N_{rl}), and said disclosure suggests configurations wherein the threshold value is less than or equal to the low idle rotational speed (N_{rl}).

The invention set forth in claim 3 does not involve an inventive step in the light of document 1 cited in the international search report.

Document 1 does not mention a hydraulic actuator for operating a steering mechanism or a hydraulic actuator for operating a work implement; however, a person skilled in the art could determine what type of hydraulic actuator will receive the hydraulic fluid that is discharged from the hydraulic pumps, as necessary, and it would have been easy for a person skilled in the art to select a hydraulic actuator that operates a steering mechanism or a work implement at that time.

The invention set forth in claim 4 is disclosed in document 1 cited in the international search report; therefore, the invention in question lacks novelty and does not involve an inventive step.

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Document 1 (page 3, lower right column, lines 1 to 7) makes disclosures with respect to adjusting the maximum absorption torque of the hydraulic pump.

The invention set forth in claim 5 does not involve an inventive step in the light of document 1 cited in the international search report.

Absorption torque adjustment means that comprise a displacement control means, which controls the displacement of a variable-displacement hydraulic pump so that the differential pressure between the discharge pressure of the variable-displacement hydraulic pump and the load pressure of the hydraulic actuator is set to a pre-set differential pressure, and a means that adjusts this pre-set differential pressure are well known. Such being the case, it would have been easy for a person skilled in the art to conceive of substituting such an absorption torque adjustment means for the absorption torque adjustment means in the invention disclosed in document 1.

The invention set forth in claim 6 does not involve an inventive step in the light of documents 1 and 2 cited in the international search report.

The configuration wherein hydraulic fluid is supplied from a plurality of variable-displacement hydraulic pumps to a plurality of hydraulic actuators via independent fluid passages is well known, as illustrated in document 2 (fig. 1).

The invention set forth in claim 7 is disclosed in document 1 cited in the international search report; therefore, the invention in question lacks novelty and

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does not involve an inventive step.

Document 1 discloses a feature wherein the deviation value (ΔN) is set so as to correspond to the target rotational speed (N_r) of the engine (page 3, lower left column, line 8 to lower right column, line 7 and fig. 10), while the target rotational speed (N_r) is set by operating an accelerator lever (8) (refer to fig. 4). Such being the case, document 1 can be said to disclose an invention equipped with an operational element (8) for setting the target rotational speed of an engine in conjunction with the manipulation of the operation element, wherein a specific threshold value is set in conjunction with the manipulation of the operation element (8).